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# **Integrating International Student Mobility in Work-Based Higher Education: The Case of Germany**

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## **Abstract**

Dual study programs are hybrid forms of work-based higher education that have expanded very rapidly in Germany—a country traditionally considered a key model in both higher education (HE) and vocational education and training (VET). The continued expansion of these hybrid programs increasingly raises questions if, how, and why they may be internationalized. Although comparative research suggests that this could be challenging due to the uniqueness of the German education and training system, strong forces support internationalization. This study examines the current state and the future prospects of internationalization of such innovative dual study programs by focusing on student mobility, a key dimension of internationalization. We find growing interest in but still relatively little mobility related to dual study programs, whether among German (outgoing) or international (incoming) students. Based on expert interviews and document analysis, we extend existing typologies of student mobility regarding specific features of work-based HE programs. Furthermore, we discuss opportunities—at home and abroad—for increasing student mobility in this rapidly expanding sector.

## **Keywords**

higher education, work-based education, dual study programs, internationalization, international student mobility, Germany

## **Introduction: Dual Study Programs—Germany’s Work-Based Higher Education Model**

Studies on the internationalization of higher education (HE) frequently point to leading Anglophone systems (Marginson, 2007). Yet in work-based education and training, other countries’ unique strengths are acknowledged, perhaps most prominently Germany’s (e.g., Euler, 2013). This article focuses on a key aspect of internationalization, namely, international student mobility within a specific type of work-based HE: dual study programs. These have not yet been considered in the literature on international education (see Kosmützky & Putty, 2016) but represent an increasingly important feature of Germany’s HE system. They were developed since the early 1970s to introduce more practically oriented study programs at the HE level. Such dual programs join higher level academic education with in-firm training phases, thus overcoming the otherwise strong institutional divide between vocational education and training (VET) and HE, a hallmark of Germanophone education systems (see Baethge & Wolter, 2015; Graf, 2013).

Many countries worldwide have long been interested in learning from German models of practice-oriented training (Ertl, 2014)—an interest now extending to dual studies. Indeed, the ongoing expansion of dual study programs represents a significant development in German HE. In 2014, the Federal Institute for Vocational Education and Training (BIBB) counted 1,505 dual courses of study enrolling around 100,000 students (BIBB, 2015). Between 2012 and 2013 alone, offered spaces in dual study programs increased by 11% (BIBB, 2014), illustrating the impressive growth of these programs. Innovatively, dual study programs systematically combine study (theory) and work (practice) phases in the process of attaining educational qualification(s). The term “practice” is used to denote the structured learning experience in the workplace, whereas theory denotes learning within HE organizations. As boundary-spanning programs, dual studies integrate elements of VET and of HE, especially with regard to curricula, teaching staff, and funding. In coordinated ways, they connect the learning environments of firms and higher education institutions (HEIs). Concretely, academic organizations and firms work together when designing training curricula and administering programs.

What distinguishes German dual study programs from work-based HE in most other countries is the central importance given to the practice part, which typically accounts for around 50% of the overall program, while being systematically integrated into the curriculum. Theory and practical phases often alternate in several-week increments with the practical phases providing more synergies than usual internships. Formally employed by firms, students earn wages throughout their studies, including the theory phases.

Different types of dual study programs with special profiles exist (Graf, Powell, Fortwengel, & Bernhard, 2014; 2016). Students enrolled in dual study programs that integrate a full-fledged apprenticeship program (so-called

*ausbildungsintegrierende* programs) earn a recognized vocational training certificate and a bachelor's degree simultaneously. Alongside this original type, other dual study programs (a) feature extended periods of practical training within a firm or (b) allow working individuals to combine their part-time work with academic studies. Graduates of the latter types earn solely one degree (usually the bachelor's).

HEIs in Germany, including those offering such programs, increasingly have to meet national political expectations regarding internationalization—and rising student demand for international mobility (Powell & Finger, 2013). According to the German federal and state science ministers, internationalization is a “key component when developing the profiles of German HEIs and, as an essential tool of quality development, a driver of higher education reform” (Gemeinsamen Wissenschaftskonferenz [GWK], 2013, p. 2, authors' translation). In this context, practical training abroad is also becoming increasingly popular. One well-known example is the EU's program for education, training, youth and sport (ERASMUS+) that provides financial support for work placements and internships abroad—with participation levels in ERASMUS+ rapidly increasing (Bundesministerium für Bildung und Forschung, 2015).

In fact, a growing number of dual students say they would appreciate an integrated study abroad experience (Gensch, 2014). Simultaneously, employers increasingly recognize the importance of the intercultural skills and international networks that students build while abroad (Interviews DE2, DE9, DE10; see endnote 2). Moreover, an increase of international student mobility in dual study programs helps employers recruit international students as skilled workers; thus, a new form of a study migration pathway to Germany is emerging as strong links to firms facilitate retention of international students in Germany and integrate them into labor markets. Furthermore, many providers of dual study programs seek to use the growing interest in internationalization to increase their visibility and appeal in internationalized education markets, as “the cross-border delivery of higher education . . . is becoming an important growth market” (de Wit, Ferencz, & Rumbley, 2013, p. 17).

In this study, we examine the current state and the future prospects of international student mobility with regard to such dual study programs.<sup>1</sup> Internationalization can be defined as the “process of integrating an international, intercultural, and global dimension into the goals, functions, and delivery of higher education” (Knight, 2004, p. 9). This definition reflects the fact that internationalization in HE today encompasses a wide range of stakeholder groups with diverse motives, including students, faculty, administrators, and HE leaders (Altbach & Knight, 2007). Examples for key areas of internationalization are teaching staff mobility, curricular aspects, or virtual exchange, among others (Knight, 2004). Here, we examine an increasingly relevant aspect of current internationalization: cross-national student mobility.

The growing interest in dual study programs is not only general but includes specifically their internationalization in the form of increased student mobility. However, extant research on the differences between education systems and in-depth analysis of the German case suggests that internationalization could be difficult to achieve because of significant differences between institutions of workforce education and training (Euler, 2013; Thelen, 2004). Therefore, we discuss the different forms of student mobility in dual studies in Germany and barriers or facilitating conditions thereof, comparing the results (a) with established typologies of the various forms of international student mobility (e.g., Teichler, Ferencz, & Wächter, 2011) and (b) with known obstacles to mobility.

Rumbley (2011) identifies eight elements hindering student mobility: lacking information, limited motivation, insufficient funding, lacking foreign language skills, scarce time resources, quality concerns, legal obstacles, and problems with recognition. Hence, we ask whether these apply similarly to dual study programs and about their specificities. Based on this exploratory analysis, we observe that there are additional institutional obstacles. We also inquire into how these barriers may be overcome by actors interested in increasing mobility levels. Key modalities explored in this article are mobility in the theory term, the practice term, and also combinations thereof (“mixed mobility”).

Our article contributes to existing research in three ways. First, we provide an overview of the current state of international student mobility in this sector in Germany. Second, we link theoretically the low levels of mobility to the particular case of Germany and its particular education and training system. Finally, we explore diverse interest groups that strongly support internationalization, and discuss how these actors may seize opportunities to overcome existing institutional barriers at home and abroad, increasing levels of student mobility.

## **Research Methods and Data**

As this sector of the education system is currently undergoing rapid change, with scant research literature available, we opted for an explorative research design and gathered primary interview data consisting of 10 semistructured expert interviews of 50 to 90 minutes each: three with representatives of the German Academic Exchange Service (DAAD), two with representatives of the BIBB, two with representatives of a major German enterprise, two with representatives of HEIs, and one with a representative of a chamber of industry and commerce.<sup>2</sup> The criteria for selecting experts were based, among other things, on the selection of dual study locations to be examined. The recent expansion of dual study programs has been more dynamic in some German states than in others, which is why we focus on established locations, including the Baden-Württemberg

Cooperative State University (DHBW; with more than 34,000 students on nine campuses), the Berlin School of Economics and Law (with ca. 2,000 students in the Department of Cooperative Studies), and the campaign office of “Duales Studium Hessen” (an umbrella brand promoting around 100 dual study opportunities in the state of Hesse). These three specific organizational forms—a dual education university with multiple campuses, a dual education department at an institution of HE, and a statewide dual education umbrella brand—illustrate the diversity of contemporary dual studies.

In analyzing the interviews, we applied the tools of theory-guided qualitative content analysis (Gläser & Laudel, 2009), combining qualitative content analysis with inductive category formation. Among the overarching categories are different forms of student mobility and the corresponding barriers or facilitating factors. To complement the interviews, we reviewed relevant research on dual study programs identifying findings that might be transferable to internationalization (e.g., Krone, 2015; Wissenschaftsrat [WR], 2013). In addition, we checked existing databases (e.g., *Hochschulkompass*) as well as the websites of educational providers for information on the degree and type of student mobility.

Interviewees emphasized that the current rate of student mobility in dual study programs is relatively low. A recent study by Bustamante, Linz, Quilisch, and Rieloff (2015) on dual study programs in business and engineering—the two major fields of dual studies—finds that only close to a third of the HEIs providing dual study programs offer their students the opportunity to study abroad during the theory term, and less than a sixth enable foreign students to study in their dual programs during the theory term. This contrasts with regular study programs, which usually offer both outgoing and incoming student mobility.

## **Outgoing Mobility in Dual Study Programs**

Dual study programs are characterized by (at least) two learning settings: the classroom and the workplace. What relevant characteristics of HEIs and employers determine outgoing student mobility? Are there specific fields of study, industries, firm types, or study phases that are currently especially conducive to students’ international mobility?

Generally, we can distinguish between international mobility during the theory phase or during the practice phase, but it is also possible to combine these (what we call “mixed mobility,” see also Table 1). However, as dual study programs represent a niche within research-oriented public universities, these programs have not yet figured prominently in universities’ internationalization strategies. By contrast, some of the private organizations offering dual study programs are more active in terms of student mobility opportunities for marketing purposes

(Interview DE2). Examining individual fields of study, Germany's largest provider of dual study programs, the DHBW, reports that study abroad is most popular among dual students in business administration, followed by those in engineering and social studies. Undertaking a study abroad experience is often somewhat easier for business students due to rather similar curricular content in other countries (Interviews DE1, DE7). Moreover, student mobility in the areas of technology and engineering is viewed as particularly promising, not least because Germany is world renowned in these fields (Interviews DE3, DE7). Overall, this implies a favorable situation for the increase of student mobility, as dual study programs are most frequently found in the fields of business administration and economics (43%) and engineering (40%) (BIBB, 2014).

Regarding firm types more likely to promote international mobility among dual students, our evidence is mixed. Large multinational companies with their international networks often provide excellent conditions for sending students on international assignments. But many German small and medium-sized enterprises (SMEs) also have an international orientation and global contacts (Interview DE1). Likewise, when organizing study abroad assignments for students, SMEs can often act with more flexibility than large companies with their often more prestructured in-house training systems. Overall, firm size does not seem to play a major role in terms of whether or not an employer is generally interested in increasing student mobility—as long as the firm is active internationally.

The study abroad terms of dual students tend to be rather short. They rarely last more than one semester. According to a comprehensive online survey of all dual students enrolled at public and church-supported universities of applied sciences in the state of Bavaria, agreement with the statement “study abroad is quite doable” is below average (Gensch, 2014, p. 71). Importantly, institutional differences between national education systems pose a significant barrier to increasing student mobility. Existing literature has highlighted the attractiveness as well as idiosyncratic position of Germany's skill regime with its strong and deeply embedded dual vocational training model (Ertl, 2014; Euler, 2013). The limited presence of similar structures and institutions in other countries complicates internationalization attempts significantly. In this context, increasing student mobility may perhaps best be accomplished by leveraging the capacities of employers. Not all employers are interested in sending their dual students abroad, but their hesitance could perhaps be reduced if they would better understand the benefits of students going abroad. Sometimes, employers point to the “easier” option of sending staff on international assignments *after* they have completed their studies (Interview DE8). Likewise, most employers do not want their dual students to exceed the standard time to degree, because they are paid a salary throughout their studies (Interview DE1). Furthermore, working abroad does not

necessarily provide students with the kind of firm-specific training experiences that many employers hope for (Interview DE2). In such cases, sending students to a branch office or a partner firm abroad during the practical phase is often the preferred option. But not all employers have the necessary contacts abroad, which challenges the general applicability of this approach.

Although in general scarce time resources are considered a challenge to student mobility (Rumbley, 2011), this is even more true for dual study programs due to the rigorous study schedule. For example, at the DHBW, students are strongly discouraged from exceeding the standard duration of three years to earn their bachelor's degree. For that reason, the DHBW postulates that all credits students earn during a semester abroad must be fully applicable to their degree. However, the usual requirement that theory and practical terms need to be closely interconnected is relaxed somewhat for students going abroad (Interview DE1).

Labor laws in receiving countries are a further challenge to internationalization, with the same applying, conversely, to foreign students coming to Germany. In some countries, there are regulatory obstacles to obtaining a work permit (Interview DE3) such as differences in national legislation on minimum wages or fixed-term employment contracts. The same is true of visa policies: The hybrid nature of the dual studies model sometimes makes it difficult to decide whether students should seek a student visa or a work visa or both. The whole process is thus more complex compared with studying abroad as part of a traditional university degree course (Interview DE1).

Another aspect is that scholarship programs have generally ignored targeting the dual student population, even if a number of funding opportunities do exist. This is especially true for HEIs awarded an ERASMUS University Charter (EUC) by the European Commission and hence gaining access to the corresponding funds.

### *Opportunities for Facilitating Outgoing Student Mobility*

The abovementioned barriers also suggest a number of strategies that could promote outgoing international mobility among dual students.

A key issue is the need for a more systematic involvement of employers. Company representatives reported that there is strong—and growing—interest in dual study programs and increased international student mobility (Interviews DE9, DE10). Good practice approaches start from that interest and coordinate it more effectively, for instance, by creating informational materials telling employers about the various models and benefits of international mobility (Interviews DE8, DE10). Furthermore, HEIs might increasingly require employers to provide study abroad opportunities as a precondition for being admitted as a dual partner. Expanding the



admissions requirements for companies seems reasonable because students often need permission from their training organizations also if they want to go abroad during their theory term.

Compared with the governance model in Germany's classic dual system of apprenticeship training, at least one important social partner is notably absent from most dual study programs: trade unions as organizations directly representing workers' interests. Given that unions have traditionally advocated for more general education and transferable skills in framework curricula (Thelen, 2004), stronger union involvement could have a positive effect on student mobility opportunities in dual study programs. Simultaneously, giving dual students a stronger voice in decision-making processes of relevant boards and committees at the firm level could have similarly positive effects.

Generally, it is also important to improve networking and collaboration among all relevant stakeholders in the organizational field of international mobility in dual studies (WR, 2013). When it comes to establishing exchange partnerships with interested employers abroad, the German Chambers of Commerce Abroad in particular can play a crucial role as hubs supporting local corporate activities (Interview DE2). In addition, the extent to which HEIs can be encouraged to make additional efforts toward enabling international mobility for their dual students is crucial (several interviews).

Furthermore, issues of credit transfer are key for increasing international mobility. In good practice cases, learning goals and their documentation are defined in such a way that earning transfer credits for theory or practice terms abroad is made as easy as possible (Interview DE6). As training contracts for dual study programs are usually structured in clear and narrow terms, the transferability of credits earned abroad should ideally be guaranteed from the very beginning (Interview DE8). Other opportunities to facilitate international student mobility emerge with regard to the study abroad timeline and financial support. One option is to extend the standard time to degree to soften the rigorous requirement that dual students must be able to transfer all credits they earn abroad to their home institution.

## **Incoming Mobility in Dual Study Programs**

The previous sections on outgoing mobility already listed a number of factors that also apply to incoming students. However, unlike in Germany (or Austria and Switzerland), in many other countries practice-oriented training programs do not yet enjoy the same level of recognition as academic, classroom-based training programs. This lower cultural status of practice-oriented education and training and the lack of equivalent work-based study programs are reasons why many international students have limited interest in dual study programs in Germany.

In countries where VET has lower status, academic, classroom-based study is often perceived by most youth and their parents as the most or even the only viable path to a desirable career (Interview DE6).

The limited presence of similar program structures in other countries can cause misfits between the contents of dual study programs and the expectations of potential incoming students. Communication structures between employers, HEIs, and government stakeholders need to be enhanced to improve the general conditions for foreign students in dual study programs in Germany (Interview DE3). This means, for example, clarifying the legal conditions for receiving a work permit during the practice term. Furthermore, the condensed schedule and rigorous curriculum of the theory phases is often not very attractive to foreign students (Interview DE7). Coordinating stakeholders should help to adapt the theory term to better meet the needs of international students.

Another aspect is the language barrier—often a major problem for student mobility. English language programs are still quite rare in Germany’s dual training sector, especially at the undergraduate level (Interviews DE2, DE8). Indeed, the very quality that is unique about dual education—its interlocking phases of theory-oriented education in the university and practical training in the workplace—is difficult to realize for incoming students, especially because working at a German company in most cases requires solid skills in speaking German (Interviews DE1, DE2). This emphasizes necessary investments in German language courses available to incoming dual students.

### *Opportunities to Facilitate Incoming Student Mobility*

For German employers, dual study programs are a means of recruiting highly skilled foreign students—and prospective employees (Interview DE4; cf. WR, 2013). In this context, it is possible to distinguish between (a) a strategy for recruiting workers abroad and (b) a strategy to counteract demographic trends in Germany. For (a), it appears helpful to promote exchanges, with foreign students coming to Germany to gain experience but then returning to their home countries. When searching for partner organizations abroad that might be interested in exchange programs, one promising approach is to identify regions and stakeholders that have already developed an interest in the potential of practice-oriented dual training schemes as a means of fighting youth unemployment and creating high-skilled jobs at the middle-management level (Interview DE5). In the case of (b), it seems more advisable to recruit foreign students to complete full undergraduate dual degrees in Germany (Interview DE1).

A related strategy is to create a preuniversity pathway program specifically designed for prospective dual students from abroad, providing them with an introduction to the didactic principles of dual education as well as German language instruction. Such a preparatory course could also be offered worldwide in a modular, e-learning format (Interview DE5). Specialized preparation of this kind (both with regard to language and contents) would

be crucial—not least in terms of providing initial assistance connecting foreign students and German employers (Interview DE7).

## Types of International Mobility in German Work-Based HE Programs

Based on our analysis of the current state of student mobility and the facilitating and inhibiting factors for both incoming and outgoing students, Table 1 provides a typology of the four major possibilities for international mobility in dual study programs. It builds on the existing literature (Kelo, Teichler, & Wächter, 2006; Teichler et al., 2011) that distinguishes between outgoing and incoming mobility (see first line) and the temporal dimension of mobility (credit/temporary mobility vs. degree mobility). Thus, while Types 1, 2 and 3 are instances of credit/temporary mobility, Type 4 “degree mobility” aims at the acquisition of a whole qualification abroad. However, Table 1 also extends the existing typology on student mobility as it focuses more explicitly on the distinction between mobility in the theory or the practice phase. It should be noted that distinguishing between mobility for studies and mobility for internships is misleading in the case of dual study programs, as the practice term in such programs tends to go beyond mere internships. Instead, the work placements abroad are supposed to offer equivalent practical working experiences to those at home, ideally being integrated into the study programs’ overall curricula. Furthermore, with Type 3 “mixed mobility,” we add the combination of theory and practice phases, referring to cases when a student completes a direct combination of theory and practice abroad.

**Table 1.** Types of Student Mobility in Dual Study Programs.

	Outgoing	Incoming
1. Mobility in the theory term of dual studies	1a. Dual students from Germany complete a theory term at a practice-oriented HEI abroad	1b. Foreign students complete a theory term at a German HEI offering dual study programs
2. Mobility in the practice term of dual studies	2a. Dual students from Germany complete a practice term with a company abroad	2b. Foreign students complete the practice term of a dual study program with a German employer
3. Mixed mobility	3a. Dual students from Germany complete a direct combination of theory <i>and</i> practice abroad	3b. Foreign students complete a direct combination of theory <i>and</i> practice in Germany

4. Degree mobility	4a. A person from Germany completes his or her entire degree at a work-based HEI abroad	4b. A foreign person completes his or her entire dual study program in Germany
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*Note.* HEI = higher education institution.

Source: Adapted from Graf et al. (2014; 2016).

Reflecting the currently existing forms of mobility in dual studies, Table 1 also shows those identified by the interviewees as most desirable (especially 3a and 3b). Yet, our interviews indicate that Type 1 “Mobility in the theory term” and Type 2 “Mobility in the practical term” are the most frequently practiced forms, even though the number of mobile students completing their practice term abroad is unknown at this point (but see Bustamante et al., 2015). Type 3 “Mixed mobility” is more complicated to realize, not least due to the situation that few structurally similar work-based programs exist outside of Germany and the need to coordinate practical and theory phases abroad. Type 4 “Degree mobility” is mainly an option in the case of incoming student mobility, given that outside of Germany few functionally equivalent programs offer a similarly strong integration between theory and practice.

Furthermore, we have identified two major models of support for mobility in such programs. First, the *tandem* (or “buddy”) model implies that a dual student in Germany and a dual student (or one enrolled in a practice-oriented program) abroad are paired as a tandem, supporting each other while completing their theory and/or practical terms abroad. This model is especially helpful as it fosters the adaption to the dual local context through peer support. Second, *joint, double, or multiple dual degree programs* mean that a dual study program is created as an integrated program in collaboration between two or more practice-oriented partner universities in different countries. In this model, the conditions for successful international student mobility are favorable as the student exchange is firmly institutionalized from the start, that is, the students automatically complete theory and/or practical study phases abroad. Although both of these support models are also known for regular study programs, they can be considered especially helpful to overcome the barriers related to the required link between theory and practice phases in the case of international study experiences in work-based HE.

## Discussion

The analysis of international student mobility of dual study programs remains nascent, which contrasts with the growing demands to internationalize this expanding sector of HE and the widespread interest in work-based HE models. This is surprising, because compared with traditional dual apprenticeship training at the secondary level, the increase of international mobility at the HE level seems more feasible, especially given the long-standing

experience of HEIs in organizing the international mobility of students. This is further facilitated by HE systems being more globally isomorphic than are national VET systems, not least because VET systems often show complex patterns of coordination between various actors that often are unique to particular countries and their respective systems of industrial relations (Thelen, 2004; Busemeyer & Trampusch, 2012).

We contribute to this emerging research stream by, first, providing an overview of the current state of international student mobility in dual studies in Germany; second, by linking theoretically the low levels of mobility to the case of Germany and its particular education and training system; and, third, by exploring diverse interest groups that support internationalization, and discussing how these actors may seize opportunities to overcome existing institutional barriers at home and abroad to increase levels of student mobility.

Our analysis suggests that existing databases on student mobility should be expanded to include more detailed information not only on the character of mobility in the practice term but also on the “mixed mobility” of theory and practice terms, given that this represents a novel category. Key obstacles to such forms of mobility include those that have been established for regular study programs, but are complicated by additional factors: (a) the potentially gatekeeping role of employers and their specific interests and needs in skill formation; (b) the legal complications around work placements and the transitions between work and study placements abroad; (c) the need to systematically integrate practice-oriented training into the curriculum even when it takes place abroad; (d) the sometimes limited social reputation of work-based forms of education in countries without a dual apprenticeship tradition; and (e) the need for an increased coordination of all stakeholders in work-based HE.

Thus, institutionalizing student mobility opportunities is highly demanding and requires various supportive measures on different levels. At the national level, it would be important to connect and coordinate all relevant actors in the organizational field of dual studies. Such a network would not only provide everyone involved with better information, it could also enable them to respond to specific problems concerning student mobility of dual study programs. A complementary national-level strategy would, for instance, include the more systematic adaptation of scholarship systems to the special requirements of dual study programs and the establishment of funding programs that sustainably support related internationalization efforts of HEIs. In dual studies, a major source of funding for institutional student mobility can potentially be derived from the training companies themselves, for example, through the salaries paid to the students.

The next level concerns the organization of dual study programs. At this meso level, too, more cooperation between employers and HEIs would improve the exchange of information and joint coordination of international mobility. Furthermore, the need to establish more theory and practice offerings in English is a critical challenge.

To increase incoming mobility, supportive measures such as preparatory courses can address issues concerning language proficiency, academic and, crucially, professional requirements. To promote outgoing student mobility, HEIs can create structures to provide information about opportunities for going abroad and to facilitate credit transfer.

Regarding the employer side, our interviewees pointed out that employers should enable students to undertake an international experience even if it may not imply any immediate or direct company-specific benefits. Likewise, employers should be prepared to accept that students who go abroad during their dual studies may take longer to finish the program, but with valuable intercultural experience and life skills helpful in globalized labor markets. Overall, the interest of German companies, while depending on their international orientation, seems to be rising and is likely to form a solid foundation for increasing international student mobility.

More generally, work-based HE programs are attractive for a broad target group interested in both rigorous academic and workplace-based experiences. The growing demand for programs that systematically bridge the divide between the academic and the vocational learning environments is evident in many countries around the world. Thus, the issues raised in this analysis regarding the opportunities and limits of student mobility in such programs will likely become more important in the future, in Germany and beyond.

## Endnotes

1. Although spatial mobility has been increasing in many education programs, there has as yet been no nationwide survey of the mobility of dual students, so this analysis focuses mainly on relevant institutional factors.
2. Interviews (in chronological order) in Germany (DE): DE1: December 9, 2013; DE2: December 11, 2013; DE3: December 12, 2013; DE4: December 12, 2013; DE5: December 12, 2013; DE6: December 13, 2013; DE7: December 13, 2013; DE8: December 17, 2013; DE9: January 15, 2014; and DE10: March 14, 2014.

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